CLAIMS

WE CLAIM:

1. A flowable materials container comprising:

a first sidewall and a second sidewall sealed together along a peripheral seam to define a fluid chamber, at least one of the first and second sidewall is a film having at least one layer of blend of a first component selected from the group of: (1) ethylene and α-olefin copolymers having a density of less than about 0.915 g/cc, (2) ethylene copolymerized with lower alkyl acrylates, (3) ethylene copolymerized with lower alkyl substituted alkyl acrylates and (4) ionomers, the first component being present in an amount from about 99% to about 55% by weight of the blend, a second component in an amount by weight of the blend from about 45% to about 1% and consists of one or more polymers of the group: (1) propylene containing polymers, (2) polybutene polymers, (3) polymethylpentene polymers, (4) cyclic olefin containing polymers and (5) bridged polycyclic hydrocarbon containing polymers; and,

the film has a modulus of elasticity when measured in accordance with ASTM D882 of less than about 60,000 psi, an internal haze when measured in accordance with ASTM D1003 of less than about 25%, an internal adhesion ranking of greater than about 2, a sample creep at 120°C under 27 psi loading of less than or equal to150% for a film having a thickness of from about 5 mils to about 15 mils, and the film can be heat sealed into a container having seals wherein the seals remain intact when the container is autoclaved at 121°C for one hour.

2. The container of claim 1 wherein the propylene containing polymer is selected from the group consisting of homopolymers of polypropylene, and random and block copolymers and random and block terpolymers of propylene with one or more comonomers selected from α-olefins having from about 2 to about 17 carbons.

3. The container of claim 2 wherein the second component is a propylene and ethylene copolymer having an ethylene content of from 1-6% by weight of the copolymer.

4. The container of claim 2 wherein the second component is a blend of a first propylene containing polymer and a second propylene containing polymer.

5. The container of claim 4 wherein the first propylene containing polymer has a first melt flow rate and the second propylene containing polymer has a second melt flow rate wherein the first melt flow rate is about 3 times greater than the second melt flow rate.

6. The container of claim 4 wherein the first propylene containing polymer has a first melt flow rate and the second propylene containing polymer has a second melt flow rate wherein the first melt flow rate is about 5 times greater than the second melt flow rate.

7. The container of claim 4 wherein the first propylene containing polymer has a first melting point temperature and the second propylene containing polymer has a second melting point temperature wherein the first melting point temperature is higher than the second melting point temperature by at least about 5°C.

8. The container of claim 4 wherein the first propylene containing polymer has a first melting point temperature and the second propylene containing polymer has a second melting point temperature wherein the first melting point temperature is higher than the second melting point temperature by at least about 10°C.

9. The container of claim 1 wherein the cyclic olefin has from 5 to about 10 carbons in the ring.

10. The container of claim 9 wherein the cyclic olefin is selected from the group consisting of substituted and unsubstituted cyclopentene, cyclopentadiene, cyclohexene, cyclohexadiene, cycloheptene, cycloheptadiene, cyclooctene, and cyclooctadiene.

11. The container of claim 1 wherein the bridged polycyclic hydrocarbon has at least 7 carbons.

12. The container of claim 11 wherein the bridged polycyclic hydrocarbon is selected from the group consisting of polycyclic hydrocarbons having at least 7 carbons.

13. The container of claim 1 wherein the α-olefin has from 3 to 17 carbons.

14. The container of claim 1 wherein the α-olefin has from 4 to 8 carbons.

15. The container of claim 14 wherein the ethylene and α-olefin copolymer is obtained using a single site catalyst.

16. The container of claim 1 wherein the blend is subjected to electron beam radiation in a dosage amount from about 20 kGy to about 200 kGy.

17. The container of claim 1 further comprising a peelable seal dividing the container into a first chamber and a second chamber.

18. The container of claim 17 wherein the peelable seal extends between lateral edges of the container.

19. The container of claim 17 wherein the peelable seal extends between end edges of the container.

20. The container of claim 17 wherein the peelable seal does not intersect the peripheral seal of the container.

21. A flowable materials container comprising:

a first sidewall and a second sidewall sealed together along a peripheral seam to define a fluid chamber, the sidewall being of a film having at least one layer of a first component selected from the group of: (1) ethylene and α-olefin copolymers having a density of less than about 0.915 g/cc, (2) ethylene copolymerized with lower alkyl acrylates, (3) ethylene copolymerized with lower alkyl substituted alkyl acrylates and (4) ionomers, the first component being present in an amount from about 99% to about 55% by weight of the blend;

a second component in an amount by weight of the blend from about 45% to about 1% and consists of one or more polymers of the group: (1) propylene containing polymers, (2) polybutene polymers, (3) polymethylpentene polymers, (4) cyclic olefin containing polymers and (5) bridged polycyclic hydrocarbon containing polymers; and,

wherein the film is subjected to electron beam radiation in a dosage amount from about 20 kGy to about 200 kGy.

22. The container of claim 21 wherein the film has a modulus of elasticity when measured in accordance with ASTM D882 of less than about 60,000 psi, an internal haze when measured in accordance with ASTM D1003 of less than about 25%, an internal adhesion ranking of greater than about 2, a sample creep at 120°C under 27 psi loading of less than or equal to150% for a film having a thickness of from about 5 mils to about 15 mils, and the film can be heat sealed into a container having seals wherein the seals remain intact when the container is autoclaved at 121°C for one hour.

23. The container of claim 21 wherein the blend is exposed to a oxygen partial pressure less than ambient conditions when exposed to the electron beam radiation.

24. The container of claim 21 wherein the propylene containing polymer is selected from the group consisting of homopolymers of polypropylene, and random and block copolymers and random and block terpolymers of propylene with one or more comonomers selected from α-olefins having from about 2 to about 17 carbons.

25. The container of claim 21 wherein the second component is a propylene and ethylene copolymer having an ethylene content of from 1-6% by weight of the copolymer.

26. The container of claim 21 wherein the second component is a blend of a first propylene containing polymer and a second propylene containing polymer.

27. The container of claim 26 wherein the first propylene containing polymer has a first melt flow rate and the second propylene containing polymer has a second melt flow rate wherein the first melt flow rate is about 3 times greater than the second melt flow rate.

28. The container of claim 26 wherein the first propylene containing polymer has a first melt flow rate and the second propylene containing polymer has a second melt flow rate wherein the first melt flow rate is about 5 times greater than the second melt flow rate.

29. The container of claim 26 wherein the first propylene containing polymer has a first melting point temperature and the second propylene containing polymer has a second melting point temperature wherein the first melting point temperature is higher than the second melting point temperature by at least about 5°C.

30. The container of claim 26 wherein the first propylene containing polymer has a first melting point temperature and the second propylene containing polymer has a second melting point temperature wherein the first melting point temperature is higher than the second melting point temperature by at least about 10°C.

31. The container of claim 21 wherein the cyclic olefin has from 5 to about 10 carbons in the ring.

32. The container of claim 31 wherein the cyclic olefin is selected from the group consisting of substituted and unsubstituted cyclopentene, cyclopentadiene, cyclohexene, cyclohexadiene, cycloheptene, cycloheptadiene, cyclooctene, and cyclooctadiene.

33. The container of claim 21 wherein the bridged polycyclic hydrocarbon has at least 7 carbons.

34. The container of claim 33 wherein the bridged polycyclic hydrocarbon is selected from the group consisting of polycyclic hydrocarbons having at least 7 carbons.

35. The container of claim 21 wherein the α-olefin has from 3 to 17 carbons.

36. The container of claim 21 wherein the α-olefin has from 4 to 8 carbons.

37. The container of claim 35 wherein the ethylene and α-olefin copolymer is obtained using a single site catalyst.

38. The container of claim 21 further comprising a peelable seal dividing the container into a first chamber and a second chamber.

39. The container of claim 38 wherein the peelable seal extends between lateral edges of the container.

40. The container of claim 38 wherein the peelable seal extends between end edges of the container.

41. The container of claim 38 wherein the peelable seal does not intersect the peripheral seal of the container.